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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,555	10/04/2001	Victor F. Petrenko	392500	1455

30955 7590 03/11/2004

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EXAMINER

VAN, QUANG T

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 03/11/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/970,555

Applicant(s)

PETRENKO, VICTOR F.

Examiner

Quang T Van

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-23 and 43 is/are pending in the application.
- 4a) Of the above claim(s) 25-27 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-14, 23 and 43 is/are rejected.
- 7) ☒ Claim(s) 8-10 and 15-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Election/Restrictions

1. The Examiner is acknowledged the Applicant requests that the August 11, 2003 election Group I, Species I be treated as an election with traverse and the Examiner also notes that, as long as claim 1 is generic, all non-elected claims which depend on claim 1 will considered when claim 1 is found to be allowed.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bridges et al (US 5,586,213). Bridges discloses, figure 4, an ionic contact media comprising a first electrode (12) disposed on a surface (18) a second electrode (14) proximate to the first electrode (12); an interelectrode space (38) separating the first (12) and second electrodes (14); and a power source (24) connected to the first (12) and second electrodes (14), the power source (24) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (38).
4. Claims 1, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Brouns et al (US 4,376,598). Brouns discloses, figures 3-4, a verifying soil at or below a

soil surface location comprising a first electrode (10) disposed on a surface (15) a second electrode (10) proximate to the first electrode (10); an interelectrode space (20) separating the first (10) and second electrodes (10); and a power source (col. 7, lines 56-61) connected to the first (10) and second electrodes (10), the power source capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (20).

5. Claims 1-2, 4 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (US 4,651,825). Wilson, discloses, figure 4, an enhance well production comprising a first electrode (31) disposed on a surface (7) a second electrode (32) proximate to the first electrode (31); an interelectrode space (1) separating the first (31) and second electrodes (32); and a power source (6) connected to the first (31) and second electrodes (32), the power source (6) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (1).

6. Claims 1-2, 11-14 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Heath et al (US 5,330,291). Heath discloses, figure 13, a heating of solid earthen material comprising a first electrode (202) disposed on a surface (200) a second electrode (204) proximate to the first electrode (202); interelectrode space (d) separating the first (202) and second electrodes (204); and a power source (206) connected to the first (202) and second electrodes (204), the power source (206) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (d).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 4,651,825). Wilson discloses substantially all features of the claimed invention including an AC voltage between 50-100Volts with a frequency of 60 Hz.

Wilson does not disclose an AC voltage having a frequency in a range greater than 1KHz. However, Wilson did suggest the alternative current could be employed at any frequency (col. 6, lines 34-36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use AC voltage having a frequency in a range greater than 1KHz. Since more frequency would provide more heat to the object.

9. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges et al (US 5,586,213) in view of Bridges (US 5,012,868). Bridges'213 discloses substantially all features of the claimed invention except a current density range from 1 to 100mA/cm² in the interelectrode space. Bridges'868 discloses a current density range from 1 to 100mA/cm² in the interelectrode space (col. 18, lines 1-10). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in bridges'213 a current density range from 1 to 100mA/cm² in the interelectrode space as taught by Bridges'868 in order to cover more heating range in the interelectrode space.

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10. Claims 8-10,15-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest the interelectrode space has a thickness not exceeding 3 mm as recited in claims 8-10; the second electrode covers the first electrode and the second electrode is exposed to water and is porous to water as recited in claims 15-22.

Response to Amendment

12. Applicant's arguments filed 12-29-2003 have been fully considered but they are not persuasive.

13. Applicant argues that "Bridges'213 does not teach every element of Applicant's claims 1-3, 18-20 and 23". The Examiner disagrees. In figure 4, Bridges'213 discloses a first electrode (12) disposed on a surface (18) a second electrode (14) proximate to the first electrode (12); an interelectrode space (38) separating the first (12) and second electrodes (14); and a power source (24) connected to the first (12) and second electrodes (14), the power source (24) capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (38).

Further, "Merriam-Webster's Collegiate Dictionary " (<http://www.m-w.com/cgi-bin/dictionary>), defines "on": in or into a position of contact with an upper surface especially so as to be positioned for use or operation. First electrode (12) and second

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electrode (14) both disposed on a surface (18) (as defines by the Dictionary).

Therefore, Bridges'213 still meets the claim limitations and remains rejected.

Applicant argues that Brouns does not teach a first electrode disposed on the surface, but rather, "one or more pairs of electrodes placed in the soil" (Applicant's response page 8, lines 7-8) and " Brouns teaches electrodes inserted into the soil" (Applicant's response page 8, line 15). Brouns discloses, figures 3-4, a verifying soil at or below a soil surface location comprising a first electrode (10) disposed on a surface (15) a second electrode (10) proximate to the first electrode (10); an interelectrode space (20) separating the first (10) and second electrodes (10); and a power source (col. 7, lines 56-61) connected to the first (10) and second electrodes (10), the power source capable of providing a voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (20). Further, "Merriam-Webster's Collegiate Dictionary " (<http://www.m-w.com/cgi-bin/dictionary>), defines "on": in or into a position of contact with an upper surface especially so as to be positioned for use or operation. First electrode (10) and second electrode (10) both disposed on a surface (15) (as defines by the Dictionary). Therefore, Brouns still meets the claim limitations and remain rejected.

As same as Bridges'213 and Brouns, Wilson, discloses, figure 4, an enhance well production comprising a first electrode (31) disposed on a surface (7) a second electrode (32) proximate to the first electrode (31); an interelectrode space (1) separating the first (31) and second electrodes (32); and a power source (6) connected to the first (31) and second electrodes (32), the power source (6) capable of providing a

voltage with sufficient power to prevent freezing of a liquid water layer in the interelectrode space (1). Therefore, Wilson also meets the claim limitations.

Applicant also argues that Wilson "including at least three electrodes extending into a reservoir" (Applicant's response page 9, line 18). It must be noted that Wilson discloses the invention as claimed. The fact that it discloses additional electrode not claimed is irrelevant.

Applicant argues "Heath's method of treating solid earthen material comprising inserting electrodes **into** the earthen material does not teach Applicant's system for preventing ice formation on a surface of a solid object, including Applicant's first electrode disposed **on the surface**". The Examiner disagrees. Heath's invention includes a method of treating solid earthen material. It is inherent preventing ice formation on a surface between electrodes. Heath discloses, figure 13, a heating of solid earthen material comprising a first electrode (202) disposed on a surface (200) a second electrode (204) proximate to the first electrode (202); interelectrode space (d) separating the first (202) and second electrodes (204). "Merriam-Webster's Collegiate Dictionary" (<http://www.m-w.com/cgi-bin/dictionary>), defines "on": in or into a position of contact with an upper surface especially so as to be positioned for use or operation. First electrode (202) and second electrode (204) both disposed on a surface (200) (as defines by the Dictionary). Therefore, Heath still meets the claim limitations and remains rejected.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 703-308-2634. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QV
March 9, 2004



Quang T Van
Primary Examiner
Art Unit 3742